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PRELIMINARY REPORT ON THE PROBABLE EFFECT OF THE POSSIBLE
EXPANSION OF FACILITIES AT MOUNT HOPE AIRPORT

CARED Project No. 145 for

HAMILTON ECONOMIC DEVELOPMENT COMMISSION

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Introduction

1. No one would claim that an airport is the key to economic growth and that is certainly not the conclusion of this study. But, placing the proposed airport expansion in its temporal and geographic perspective it is no exaggeration to state that the airport expansion is essential to continued controlled growth of Hamilton (insofar as the development of a community is controllable).

2. The conclusions of this study are that the proposed airport expansion

(a) will significantly increase the rate of industrial growth in Hamilton.

(b) will lead to a diversification of Hamilton industry.

(c) will provide direct and indirect additional employment.

3. Certain arguments, in purely economic terms, are conventionally raised against airport development in established communities. In this instance, however, they are without much substance. Typically, they include:

1. "Wrong location" -- this is the most telling argument. Site

dimensions of the present Mount Hope airport, the direction of air traffic, the problem of land access, and the distance from Toronto seem to suggest that an alternative location should be investigated northeast of the present site.

Against this, however, one must consider the probable development of Nanticoke as a major land vehicle terminus and the concomittant requirement to expand Highway No. 6 and to provide a link with Highway 403 and with the proposed North-South Freeway and the proposed Red Hill Creek Freeway (See Hamilton Area Transportation Plan, 1963, Figure 47, p. 98).

In addition, it is still possible to expand Mount Hope both in site dimensions and in runways so as to 1) provide for future expansion, ii) take greater advantage of the natural buffer provided by the Dundas Valley and the several nearby golf courses. The alternative course of starting from nothing in a new location would take far longer and probably would be much more costly.

2. "Money can be better spent elsewhere" -- it is difficult to deal with a cost effectiveness argument in the short span of this study. One can only reiterate that improved airport facilities appear to offer vast potential for Hamilton's future growth. Indeed, one may say that no community can grow and diversify without an airport. That is the contention of this report.
3. "The airport will not attract industry". Such a contention is based on the notion that Toronto is a centripetal force, drawing new industry like a giant magnet. It is also based

on the apparently reasonable argument that Malton Airport is only 40 miles from Hamilton's city centre. The former argument is true enough but one must question industry about why it locates in Toronto and offset the attractiveness of Metro by developing Hamilton. The latter point is also true but of declining relevance as Malton approaches its capacity. A new airport is needed somewhere. That is obvious. Why not Hamilton?

4. "The capital cost is too great". This is a variation of the cost-effectiveness argument and it can be met by
1) demonstrating the proposition of Federal and Provincial monies involved in the construction of a full-service domestic airport and air terminal and 2) indicating, as this report does, a rough estimation of the gross revenue generated both directly and indirectly as a result of the airport.
5. "The existing services are satisfactory and adequate" -- this argument is short-sighted and does not allow for expansion and advance. Further, it enhances and prolongs the dependency of Hamilton upon Metro Toronto. Expansion of Mount Hope Airport is a necessary move to prepare Hamilton for the 1980's and beyond.
6. "It will be a private club for a few businessmen and hobbyists". This fairly well describes Mount Hope at present although it is serviced daily by Nordair. A new airport would not, of course, discourage private flying but would certainly tend to

give it a lesser, not a greater, role. Briefs in favour of expanding airport facilities usually seem to include statistics such as number of licensed pilots, number of private aircraft, number of students, and data on local flying clubs. This is not germane to the present discussion and should be omitted from any brief presented concerning Mount Hope.

7. "Nuisance" -- this can't be denied but the noise problem can be mitigated by reorienting the existing runways and other nuisance aspects (increased land traffic, etc.) must be offset against general municipal advantages and the inevitability of development along Highway No. 6, (the Nanticoke-Hamilton axis).
8. "Deterioration of land value" -- generally this is not true as shown subsequently in this report but it must be admitted that a short-term decline in some residential property valuation may be expected until the community adjusts to compensate for or to take advantage of the airport.

Planning Statistics

1. Population

It is assumed that the airport will serve Hamilton, Grimsby, Stoney Creek, Dundas, Waterdown, Burlington and the townships of Ancaster, Beverly, Binbrook, East Flamborough, West Flamborough, Glanford, Saltfleet and North Grimsby as its primary market.

Each is growing at its own pace and while rate of growth may be substantially altered by unforeseeable circumstances, extrapolation of current growth rates for each indicates a probable total population in the Hamilton Metropolitan area of 750,000 to 800,000 by 1985. (The Hamilton City Planning Department suggests a total of 735,000 for Burlington, Hamilton and Wentworth County by 1985.)

Population of the Metropolitan area is now (1969) estimated to be 490,000. Were it not for the proximity of Hamilton to Toronto International Airport, it is entirely probable that the city would have been operating a full service main line airport for some years now only to service the burgeoning metropolitan population.

As the Steele Report noted, future urban expansion is likely to occur mainly in the area between the escarpment and Burlington Bay and Lake Ontario. Future industrial development, however, it predicts, will be concentrated in North Grimsby and Saltfleet Townships.

2. General Economic Structure

In statistical terms Hamilton's "blue collar" or "lunch pail" image is quite correct. Primary Metal and Metal Products account for more than 50 per cent of our Manufacturing employment and Manufacturing provided employment for 40 per cent of the labour-force in 1961. According to the City Planning Department, "The steel industry in Hamilton has spawned a comple

web of inter-industry linkages whose spatial manifestation is the Bay-Front Industrial Area". Principal Manufacturers in the City are Steel Company of Canada, Dominion Foundries and Steel Company, National Steel Car, Canadian Westinghouse, International Harvester and Firestone Tire and Rubber. The first three employ 38 per cent of Hamilton's manufacturing labour-force of 65,000. Together all six employ 51% of the manufacturing labour force. There are 521 manufacturing establishments in Hamilton (704 in the Metropolitan area). During the past fifteen years only the town of Burlington has shown a net increase in both number of establishments and manufacturing employment. The long run implications of the Nanticoke development are, therefore, obvious:

1. An eventual relocation of primary steel manufacturing away from Hamilton.
2. A reconstruction of the industrial web of steel-related secondary manufacturers in the Nanticoke-Port Huron region.

The conclusion is inescapable that Hamilton must begin to draw new and diversified industry.

3. New Business Statistics

During the past ten years 14,289 new manufacturing establishments have been founded in Canada of which 5,392 were in Ontario; 416 of these establishments employed more than 50 employees and of that number 160 were located in Ontario. Considering the total figure for Ontario 2,378 establishments,

almost half, were located in the Toronto region. The principal statistics relating to these are 163 in food and beverage, 149 in clothing, 252 in furniture and fixtures, 303 in printing and allied industries, 483 in metal fabricating, 120 in machinery, 95 in electrical products, 96 in chemicals and chemical products. This represents 43 per cent of new business establishments in Ontario during the past decade, 48 per cent of new jobs and 45 per cent of new manufactured products for Ontario during the past decade. A simple extrapolation of this trend does not augur well for Hamilton's future. It suggests that by 1985, with no major intervening factors such as the development of Mount Hope Airport or a further extension of Highway No. 403 to the Southwest, that Hamilton will have lost whatever remains of its present attractiveness as a site for new industry and development. This trend is well recognized by our city planners and its effect on employment, land use, and traffic patterns is extensively covered in the Hamilton Area Transportation Plan of 1963, pages 59-63, "Projection into 1985". No substantial change has been indicated in more recent forecasts although greater attention is now apparently being given to rapid transportation systems especially to hovercraft and helicopters so as to improve secondary linkages with Metro Toronto. Additionally, the section of the transportation plan dealing with major arteries has been brought up-to-date in the South Central Highway Planning Study of the Department of Highways of Ontario in 1967. It is remarkable, however, that Mount Hope Airport is

not included in the consideration of our public planners.

Location Factor in Area Selection Criteria

There is a natural tendency for industry to concentrate at transportation hubs as has historically been shown by the early industrialization of the world's seaports, followed by the concentration of industry around rail terminal locations. Heavy industry and large bulk storage operations continue to depend upon the bulk shipping advantages of rail and water transportation. This tendency of industry to concentrate in transportation hubs has been the primary cause for the growth of Hamilton.

The concentration of industry, commerce, and dense residential development in the "central" city has resulted in time in strangulation, due to the impact of the automobile age.

Hamilton is not alone in the loss of its industries to the suburbs, the use of private automobiles, construction of fast access routes and an arterial highway system, the impact of new technology on methods of production so as to require more flexible factories, and the concept of planning for expansion through factory design inevitably has resulted in a requirement for greater land areas for modern factories. In fact, by contrast to the borough of Toronto, Hamilton is better off. Toronto has shown a net decrease in establishments, employment

and value of manufactured product during the past decade. Hamilton has fewer manufacturing establishments but employment and value of product have increased.

Of course, this is hardly a satisfying statistic. Toronto proper is not likely to share in Hamilton's misery. It is too busy providing urban(e) services to its growing neighbours. This pattern of growth around Toronto should be examined.

It is a truism (which is not always true) that North American cities grow to the West. Certainly, this has been Toronto's story, but it seems clear that the expansion of Malton airport into a mainline international airport, the commitment of the OWRC to an \$88 million trunk line and the proximity of Hamilton and American markets made the westward tendency an inevitability. One wonders, however, whether RCA would be locating at Barrie, whether new business starts in York County would be increasing at about 100 per year, whether Peel County would be experiencing a similar manufacturing industry growth rate were it not for the airport at Malton.

Two recent studies on plant location are relevant here. One was carried out by the Hamilton Planning Department, the other by the Atlantic Research Corporation in the United States.

The latter considered 26 area selection criteria, weighing each to show its relative importance for different types of industry. Thus, for example, in locating an electronics manufacturer easy access to a full service airport carried a

weight of 10%, proximity to freeways carried an equal weight, while land values and site preparation costs together carried a value of only 4%.

The Hamilton Study, a survey of attitudes regarding plant location factors, unfortunately omitted any reference to airports in its questionnaire. It is, nevertheless, very helpful for our purpose. Hamilton manufacturers identified three sources of cost differences in location analysis.

- 1) input costs (labour, materials, taxes, services).
- 2) transportation costs.
- 3) plant economies (scale, diversification, etc.)

Among these sources of cost differentials those having to do with distances and labour were most frequently mentioned. Twenty-seven per cent cited proximity to other manufacturers as Hamilton's greatest locational advantage. Furthermore, "many" of the firms surveyed expressed concern at the decline in Hamilton's locational advantage. The City Planning Department has summed up this concern as follows:

1. The unavailability of large parcels of low cost industrial land is a constraint to major increases in future industrial development. Limited expansion into Hamilton Bay and the conversion of 500 acres of residential enclaves to industrial uses are the only means of increasing the supply of industrial land in the Bay Front Industrial Area.
2. The city's internal transportation system is a constraint to a plant's successful operation.
 - (a) The road system servicing and linking industrial areas to regional highways does not provide the required accessibility. Especially east-west movement through the City is often cited as a considerable constraint.

- (b) The public transportation service linking residential areas of the City to industrial areas is inadequate.

and it recommends:

The long range solution to the land shortage and the inadequacies of the transportation system is to decentralize manufacturing activities into nodes which are strategically located with respect to other urban land uses and the transportation network.

A balanced distribution of land uses is essential in solving the urban transportation problem. Areas of traffic generation and attraction should be distributed in a pattern that optimizes the use of the entire road and transit network and is conducive to two-way peak loads on major transportation lines.

The application of the above planning principles in the Hamilton context suggests that manufacturing nodes should be established on the escarpment plateau in proximity to the growing residential communities. Such a land use distribution would minimize congestion on mountain access roads, reduce the length of the work trips, and provide an adequate amount of industrial land.

There is no reason to quarrel with these conclusions but given the tendency of industry to locate in or near a transportation hub the recommendations of the Planning Department regarding new industrial district development seem less obvious. It is true, of course, that as speed of land transportation, and accessibility to arterial highways has improved the concept of the transportation "hub" has become attenuated -- thus the present growth trend (again based on information provided by the City Planning Department) is to occupy new land along the Queen Elizabeth Way on both sides of the City. In this connection, it is interesting that both Halton and Wentworth Counties showed

a greater number of new businesses than Hamilton and Burlington together.

Economic Impact of Airport Development

The question which must be answered here is: will the expansion of Mount Hope into a full service domestic airport create a new transportation hub which will stanch the flow of industry from Hamilton to the counties or from Hamilton to the Nanticoke development. I think that it will but, without a well designed and carefully executed survey, I cannot state this positively to be the case.

Analogous reasoning does not in this case seem to be too promising. The effect on London, Ontario of the establishment of a full service domestic airport was to change the pattern of land use (i.e. the airport became a transportation hub) but not to change the pace of development. Fredericton, New Brunswick seems to have been unaffected by its airport. Ottawa's airport was developed as one step in a comprehensive integrated Capital development plan and it is difficult, therefore, to assess its influence. Edmonton was unquestionably affected by the establishment of a full service international airport but that city is in the midst of a major shift from emphasis on heavy manufacturing to emphasis on light manufacturing and service industries. Once a "blue collar" city, Edmonton having become the gateway to the North, is now the Head Office location for major Canadian petroleum exploration and production companies. The city, thereby, has adopted a white collar image and its heavy

industry has become dominated by secondary and tertiary producers.

Intuitively, one senses that within a generation Hamilton could be the same, with the focus of Hamilton manufacturing concentrated on the Mountain in industrial "nodes", "parks", or "zones" and the Burlington Street complex falling into disuetude or undergoing conversion as existing plant reaches the end of its useful life. Intuitively, one senses that as urban renewal takes place in this city it will not be a simple matter of new buildings but of socio-economic transformation -- of people renewal. Intuitively, one sense that if it is not, Hamilton's magnet will never be repowered and the city will continue its relative decline as a population and industrial centre. If industrial growth takes place on the mountain and if it is complemented by planned, organized, well-promoted and well-controlled industrial development then residential growth, limited only by the OWRC and the availability of land, will compound. For every 100 new jobs created in such an area in one year there will be 359 people (of whom 90 will be school children), 97 additional cars, additional income of \$710,000 new bank deposits of \$229,000 retail sales will increase by \$331,000, and three new retail businesses and 65 new non manufacturing jobs will be created. (Based on information provided by the Toronto Real Estate Board). The growth of Bramalea, Erin Mills, Meadowvale and the other developments west of Toronto, especially in the area of Streetsville, can be readily understood.

It seems clear to me, then, that to prevent a deterioration in Hamilton's industrial tax base, and to maintain Hamilton

as a major residential centre it is not enough to ask if an airport will draw new industry. The city must plan on drawing new industry by such measures as airport expansion, airport industrial parks, and improvement of access routes from Mount Hope to the north end of the city, to the major expressways and to the railways. The fortuitous location of Mount Hope airport on the Hamilton-Nanticoke axis of Highway No. 6 and the present availability of large tracts of land in this vicinity make such planning, development and control possible. (certainly, this possibility has not been overlooked by the developers and much of the unused land in the vicinity of the intersection of Highway No. 6 and Highway No. 53 is already in their hands).

Direct Employment Potential

Following the construction phase, the amount of permanent employment provided by the airport will vary, according to such factors as traffic, frequency of use, maintenance hangars, number of carriers servicing the airport. London, Ontario's full service domestic airport provides direct employment for 40 men and women, Ottawa's for 80. The cities are of approximately equal size. The difference is mainly accounted for by the variables listed above and by the fact that Ottawa airport operates through DOT auspices, a meteorological station which provides information to military airports in the area.

The average annual wage of persons employed in the airline industry is estimated to be \$8,971.00.

Effect on Land Values

The economic impact of airports on surrounding land is somewhat difficult to assess. If the surrounding lands are mostly residential, it then is likely that airports will cause a decline in property valuation. But this is extremely difficult to prove, a recent case in Los Angeles finds a denial of tax assessment reductions due to alleged reduction in value of residences because of aircraft noise. A Los Angeles County Tax Appeals Board ruled "Aircraft noise and distraction does not lower the value of a residence." On the other hand, in another American case a claim against the airport owner and operator (Port of Seattle) relief was granted if the property owners -- on a plot-by-plot basis -- can prove that there has been a decline in the market value of the particular piece of property traceable to the jet aircraft flights. The Court, in this case, further stated that compensation would be for "injury to market value, and that alone" and not for "individual suffering, damage, loss of quiet, or other disturbance".

In many American cities it has been found that aircraft operations are highly compatible with residential development, with, in many cases, a residential development building up around a permanent landing field with full airport facilities. The difference is first, a matter of scale and traffic volume, second, the preplanning of residential development so that it will be an integral part of the total airport development and planning.

It is a great deal easier to show correlation between

airports and commercial and industrial economic activities.

There is a positive effect on the economic well-being of commercial and industrial establishments situated in close proximity to airports. There is also a positive effect of airports on the economic well-being of a region or metropolitan area. A few examples will suffice to indicate this relationship. At the Los Angeles International Airport approximately nine years ago the area consisted of a large barren bean field with one hotel, today there are 32 hotels and motels within a two-mile radius, as well as industrial and other commercial activities.

At the El Paso International Airport a programme was instituted in 1961 to develop industrial and commercial land in and around the airport. The land was zoned for industrial and commercial uses, restricting certain blocks to aviation oriented or connected businesses, others to high rise office buildings, others to warehouses, and still others to light industrial and allied uses. The work was begun in July of 1961 and by July of 1962 a total of seven industrial or aviation related industrial leases had been signed. As an unexpected result of the development, four new aviation businesses came to the airport drawn by the industrial park programme. Probably, a planned and controlled development of Mount Hope airport and its environs would result in a similar pattern of growth. One does not have to look far to find a Canadian analogy. The commercial growth of Etobicoke and the rapid development of land bordering Highway 27 and Highway 401 near Malton airport speaks for itself.

A final example is that of airline industry employment

both nationally and in some regions. For the year ending December 31, 1969 there were 29,483 men and women employed by the airline industries, 2,200 new jobs were introduced as a result of the greater acceptance of air travel, payrolls increased from \$227,357,157 in 1968 to \$264,508,503 in 1969. The average annual wage increased about 9% in 1969 over 1968, \$8,212 in 1968 to \$8,971 in 1969.

Conclusion

It may be concluded that Hamilton can and should have a full service domestic airport. Furthermore, if Hamilton is ever to have this facility the time is now because Malton is reaching capacity and must be replaced or augmented.

This report should not be regarded as anything more than a screen. Time constraints have not permitted the thorough study which must be made to justify an investment of such large proportions.

A further study should include:

- (a) detailed definition of demand;
- (b) market segmentation by:

- 1) route densities
- 2) frequencies
- 3) type of traffic expected
- 4) volume and density of traffic
- 5) effect on land traffic
- 6) integration of other transit facilities.

It is interesting to note that the assessment of the impact on a community of establishing a full service airport appears to be one of the least studied and researched aspects of urban studies. In this connection only two studies have been found which are applicable, copies of these studies have been requested but were not available at the time this report was prepared.

If a further study is desirable it is suggested that Professor John Betak, a specialist in airport land use work with the author of this report in preparing more detailed information.

Signed: Fraser Isbester

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